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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/790,049	03/02/2004	Yoshitaka Sasaki	108272.02	9822

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EXAMINER

TUGBANG, ANTHONY D

ART UNIT	PAPER NUMBER
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3729

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/24/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/790,049

Applicant(s)

SASAKI ET AL.

Examiner

A. Dexter Tugbang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 9-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/748,207.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/2/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of the invention of Species A, Claims 1 through 8, in the reply filed on November 2, 2006 is acknowledged. The traversal is on the ground(s) that the entire application can be searched and examined without any serious burden. This is not found persuasive because the searches would be non-coextensive for each invention as each requires the application of different art, different case law, and completely different search queries. This would place a severe burden on the examiner to search all of the inventions as well as the entire application.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 9 through 32 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on November 2, 2006.

Priority

3. While the specification (on page 1) correctly refers to parent application serial no. 09/748,207, this reference does not mention the current status of the parent application, i.e. that it has matured into U.S. Patent 6,747,851. The specification should be amended to include the current status of the parent application.

Specification

4. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) **if a process, the steps.**

Extensive mechanical and design details of apparatus should not be given.

5. The abstract of the disclosure is objected to because the content is not directed to the claimed invention, i.e. the manufacturing steps of at least Claim 1. Correction is required. See MPEP § 608.01(b).

6. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: --A Method of Manufacturing a Thin-Film Magnetic Head--.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

8. Claim 7 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claim 7, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, Claim 7 first recites the broad recitation "injecting H₂O, N₂O or H₂O₂" (line 3), and then the Claim further recites "and Al(CH₃)₃ or AlCl₃" (line 3), which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1 through 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant(s) Admitted Prior Art, referred to hereinafter as the AAPA; or Hayakawa 6,459,551, in view of Miyana et al 5,626,922.

The AAPA (Related Art Figures 16A - 22B) discloses a method of manufacturing a thin film magnetic head comprising: forming a first shield layer (e.g. 103); forming a first shield gap film (e.g. 104) on the first shield layer; forming a magnetoresistive element (e.g. 105); forming a second shield gap film (e.g. 107); and forming a second shield layer (e.g. 108) on the second shield gap film. The first shield gap film (e.g. 104) of the AAPA is formed by stacking a plurality of insulating films of alumina (e.g. 104a, 104b) and by sputtering.

Alternatively, Hayakawa discloses a method of manufacturing a thin film magnetic head (in Fig. 4) comprising: forming a first shield layer (e.g. 53); forming a first shield gap film (e.g. 54) on the first shield layer; forming a magnetoresistive element (e.g. 45); forming a second shield gap film (e.g. 56); and forming a second shield layer (e.g. 57) on the second shield gap film. The first shield gap film (e.g. 54) of Hayakawa is formed by stacking a plurality of insulating films of alumina by deposition or coating (col. 7, line 65 to col. 8, line 6).

Neither the AAPA nor Hayakawa teach that the plurality of insulating films of alumina utilized in the first shield gap film is formed specifically by chemical vapor deposition (CVD).

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To form insulating films of alumina by CVD is a conventional process in the art of coatings. Miyanaga teaches forming alumina, i.e. aluminum oxide, films by CVD (col. 7, lines 62-65) for several advantages: 1) to provide a smaller power consumption during manufacture or coating, 2) to provide excellent adhesion properties, or 3) to deposit the alumina films irrespective of the surface irregularities (col. 1, lines 54-59, col. 4, lines 45-50).

Regarding Claim(s) 2 through 6, Miyanaga further teaches that the CVD process is carried out under the conditions of low pressure, plasma, at least two chambers (e.g. 1, 2, 3), and intermittent injections or deposition of films (Example 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of either the AAPA or Hayakawa by forming the first shield gap film of the plurality of alumina films by CVD, as taught by the process of Miyanaga, for anyone of the associated advantages of Miyanaga.

11. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the AAPA or Hayakawa, in view of Miyanaga et al, as applied to Claims 1 and 6 above, and further in view of Young et al 5,763,021.

The AAPA or Hayakawa, as modified by Miyanaga, discloses the claimed manufacturing process as relied upon above.

Regarding Claim(s) 7 as best understood, the modified method of the AAPA or Hayakawa does not mention that CVD is formed with at least H_2O_2 .

Regarding Claim(s) 8, the modified method of the AAPA or Hayakawa also does not mention any temperature range for CVD.

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Young teaches a CVD process that includes H_2O_2 (col. 2, lines 18-21) with at least one working example of a temperature of 300 deg. C (col. 3, lines 8-14). The advantage of having the composition and temperature within the CVD process of Young allows more uniform and reproducible electronic properties (col. 1, lines 13-18).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the method of the AAPA or Hayakawa by including with the CVD process the composition and temperature taught by Young, for the advantage of allowing more uniform and reproducible electronic properties.

Conclusion

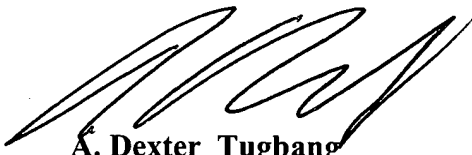
12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Dexter Tugbang whose telephone number is 571-272-4570. The examiner can normally be reached on Monday - Friday 7:30 am - 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



A. Dexter Tugbang
Primary Examiner
Art Unit 3729

January 18, 2007